



OMB Control No. 2060-0161  
Approval expires 03/31/2019

OMB Control No. 2060-0693  
Approval expires 03/31/2019

## 30-DAY NOTIFICATION

### 2015 CLEAN AIR ACT (CAA) STANDARDS OF PERFORMANCE FOR NEW RESIDENTIAL WOOD HEATERS, NEW RESIDENTIAL HYDRONIC HEATERS AND FORCED-AIR FURNACES 40 CFR PART 60 SUBPARTS AAA AND QQQQ

The public reporting and recordkeeping burden for this collection of information is estimated to average 2 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Regulatory Support Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

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**Instructions:** The manufacturer of an affected wood/pellet heater/central heater model line must notify the Administrator of the date that certification testing is scheduled to begin by email to [WoodHeaterReports@epa.gov](mailto:WoodHeaterReports@epa.gov). This notice must be received by the EPA at least 30 days before the start of testing.

GENERAL INFORMATION						
<b>Manufacturer's Name:</b> United States Stove Company						
<b>Heater Type (Circle One):</b>	<input type="checkbox"/> Adjustable Burn Rate Wood Heater	<input checked="" type="checkbox"/> Pellet Stove	<input type="checkbox"/> Single Burn Rate Heater	<input type="checkbox"/> Hydronic Heater	<input type="checkbox"/> Forced Air Furnace	<input type="checkbox"/> Other:
<b>Hydronic Heater Type (Check one):</b>	<input type="checkbox"/> Full Storage	<input type="checkbox"/> Partial Storage	<input type="checkbox"/> Indoor	<input type="checkbox"/> Outdoor	<input type="checkbox"/> Other:	
<b>Forced-Air Furnace Type (Check one):</b>	<input type="checkbox"/> Small (less than 65,000 BTU/hr heat output)		<input type="checkbox"/> Large (greater than 65,000 BTU/hr heat output)			
<b>Fuel Tested (Check one):</b>	<input type="checkbox"/> Crib	<input checked="" type="checkbox"/> Pellet	<input type="checkbox"/> Cordwood	<input type="checkbox"/> Wood Chips	<input type="checkbox"/> Other:	
<b>Model Name(s) (as will appear on test report):</b> KP5517, KP5517-P, KP5517-L, US5517, US5517-P, US5517-L, AP5617, AP5617-P, AP5617-L, VG5717, VG5717-P, VG5717-L, SP33						
<b>Model Number(s) (as will appear on test report):</b> ): KP5517, KP5517-P, KP5517-L, US5517, US5517-P, US5517-L, AP5617, AP5617-P, AP5617-L, VG5717, VG5717-P, VG5717-L, SP33						
<b>Equipped with a catalytic combustor?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No						
<b>Mailing Address:</b> 227 Industrial Park Rd						
<b>Street Address:</b> 227 Industrial Park Rd						



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<b>City:</b> South Pittsburg	<b>State:</b> TN	<b>ZIP Code:</b> 37380
<b>Phone:</b> (423) 837-2100 ext 4513	<b>Fax:</b>	<b>Web Site:</b> www.usstove.com
<b>Address of Manufacturer:</b> 227 Industrial Park Rd		
<b>City:</b> South Pittsburg	<b>State:</b> TN	<b>ZIP Code:</b> 37380
<b>EPA APPROVED TEST LABORATORY</b>		
<b>Name and Title of Authorized Representative:</b> Sebastian Button      Laboratory Manager		
<b>Company:</b> PFS-TECO		
<b>Phone:</b> 503-650-0088	<b>E-mail:</b> <a href="mailto:sebastian.button@pfsteco.com">sebastian.button@pfsteco.com</a>	<b>Fax:</b>
<b>City:</b> Clackamas	<b>State:</b> OR	<b>ZIP Code:</b> 97015
<b>EPA APPROVED THIRD-PARTY CERTIFIER</b>		
<b>Name and Title of Authorized Representative:</b> John Steinert      General Manager		
<b>Company:</b> PFS-TECO		



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<b>Phone:</b> 503-650-0088	<b>E-mail:</b> john.steinert@pfsteco.com	<b>Fax:</b>
<b>City:</b> Clackamas	<b>State:</b> OR	<b>ZIP Code:</b> 97015
<b>COMPLIANCE TEST INFORMATION</b>		
<b>Test Method(s):</b> EPA Method 28R, ASTM 2779-10, CSA B415.1-10 Per ALT-146 Approval of alternative approach to determining medium burn rate category		
<b>Date(s) of Proposed Test:</b> <del>January 10, 2022</del> <del>February 2, 2022,</del> <del>February 4, 2022</del> February 8, 2022		
<b>Testing Location:</b> PFS-TECO 11785 SE Highway 212 - #305 Clackamas, OR 97015		



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John D. Voorhees, VP of Compliance

**Print Name and Title of Authorized Official**

**Signature**

December 9, 2021

**Date**

**Telephone Number:** \_423 837-2100 Ext 4513\_\_\_\_\_

**Email Address:** [Johnv@usstove.com](mailto:Johnv@usstove.com)

**Remarks:**

1/7/2022 - Due to carrier related shipping delay, testing postponed to 2/2/2022

2/2/2022 - Testing date postponed due to Memo dated 2/2/2022 received from Stef Johnson & Robert Scinta regarding medium burn-rate requirement for Pellet Heaters.

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2/4/2022 - Test rescheduled for 2/8/22 due to new ATM-146 being in effect. Attached.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
RESEARCH TRIANGLE PARK, NC 27711

OFFICE OF  
AIR QUALITY PLANNING  
AND STANDARDS

Mr. John Steinert  
Vice President  
PFS TECO  
11785 SE Hwy 212  
Suite 305  
Clackamas, OR 97015

02/04/2022

Dear Mr. Steinert,

I am writing you in response to your correspondence dated February 3, 2022, in which you request the use of an alternative testing procedure to demonstrate compliance with 40 CFR part 60, Subpart AAA – Standards of Performance for New Residential Wood Heaters (Subpart AAA). The Office of Air Quality Planning and Standards, as the delegated authority, must make the determination on any major alternatives to test methods and procedures required under 40 CFR parts 59, 60, 61, 63, and 65. Your proposed alternative test method and our approval decisions are discussed below.

According to the information provided, you seek an alternative test method for use when conducting testing on the United States Stove Company, Model KP5517 pellet heater. Currently, as required by section 60.534(a)(1)(i) of Subpart AAA, a manufacturer has the option to test their appliance in accordance with 40 CFR part 60, Appendix B, Method 28R for a crib fuel appliance or ASTM E2779-10 “Standard Test Method for Determining Particulate Matter Emissions from Pellet Heaters” (ASTM E2779-10) for a pellet fuel appliance. This request seeks an alternative to section 9.4.1.2 of ASTM E2779-10 which specifies test conditions for pellet heaters including the determination of the Medium Burn Rate Category and states that the medium burn rate must be  $\leq 50\%$  of the maximum burn rate.

In your request, you state that the specification for determining the medium burn rate found in ASTM E2779-10 is incorrect, and the Medium Burn Rate Category should be defined as less than 50% of the midpoint point (this is defined in the attached Memo as 50% of the span between the Maximum Burn Rate and the Low Burn Rate) between the high and low burn rates. Furthermore, your request includes a memorandum dated February 2, 2022, titled “Appropriate Calculation of Medium Burn Rate Category in ASTM E-2779 Testing” (attached) which was sent to the EPA’s Office of Enforcement and Compliance Assurance. This memorandum states that an error had been uncovered in determining the appropriate Medium Burn Rate Category in ASTM E2779-10 for compliance pursuant to Subpart AAA. Specifically, section 9.4.1.2 of ASTM E2779-10 states that “the pellet heater shall be operated with the control or controls set in

the position(s) as needed to achieve a burn rate that is  $\leq 50\%$  of the maximum burn rate.” Table 1 of ASTM E2779-10 also notes that the Medium Burn Rate Category test must be  $\leq 50\%$  of the maximum burn rate. The memorandum states that this is incorrect as it assumes that zero is the other bound for determining half of the maximum burn rate, and that the correct approach in determining the Medium Burn Rate Category should be at a level below 50% of the span between the Maximum Burn Rate and the Low Burn Rate (a non-zero value).

We have reviewed your request and agree that the Medium Burn Rate Category should be defined as less than 50% of the span between the high and low burn rates. Meaning that the Medium Burn Rate Category should be at a level below 50% of the span between the Maximum Burn Rate and the Low Burn Rate (a non-zero value).

Based on the information provided and with the caveats set forth below, we are approving your request for an alternative methodology used when calculating the Medium Burn Rate Category to conduct certification testing as required by Subpart AAA, section 60.534(a)(1)(i) on pellet heaters. This approval is based on the understanding that the Medium Burn Rate Category is defined as less than 50% of the span between the high and low burn rates. Additionally, this approval is based on the understanding that the lowest heat output (Btu/hr) setting available to the user, and corresponds to the lowest burn rate to be evaluated during certification testing; this is consistent with Subpart AAA, section 60.534(a)(1), which states: “The burn rate for the low burn category must be no greater than the rate that an operator can achieve in home use and no greater than is advertised by the manufacturer or retailer.”

With this Alternate Test Method, the following changes to ASTM E2779-10 must be followed for certification testing:

1. Medium Burn Rate Category burn rate is defined as:

*Nomenclature:*

*Max* = Maximum burn rate (kg/h)

*Min* = Minimum burn rate (kg/h)

$$\frac{Max+Min}{2} \quad \text{Eq.1}$$

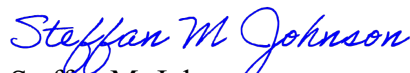
All other requirements of ASTM E-2779-10 must be followed during the testing, and all requirements of 40 CFR part 60, Subpart AAA must be satisfied as described in your test report. A copy of this letter must be included in each certification test report where this alternative test method is utilized.

Because this alternative method may be of use to others, we feel that it is reasonable that this approval be broadly applicable to all pellet heaters tested in accordance with ASTM E2779-10 “Standard Test Method for Determining Particulate Matter Emissions from Pellet Heaters” and subject to the requirements of §60.534(a)(1)(i) of Subpart AAA. For this reason, we will post this

letter as ALT-146 on our website at <https://www.epa.gov/emc/broadly-applicable-approved-alternative-test-methods> for use by other interested parties. This alternative method approval is valid until such time that Subpart AAA is revised or replaced to require a different pellet heater certification method, and at such time, this alternative will be reconsidered and possibly withdrawn.

If you have additional questions regarding this approval, please contact Angelina Brashear of my staff at 919-541-4746 or [brashear.angelina@epa.gov](mailto:brashear.angelina@epa.gov).

Sincerely,



Steffan M. Johnson  
Group Leader  
Measurement Technology Group

cc: Angelina Brashear – EPA/OAQPS/AQAD  
Chuck French – EPA/OAQPS/SPPD  
Rafael Sanchez – EPA/OECA  
Robert Scinta – EPA/OECA  
Michael Toney – EPA/OAQPS/AQAD  
Nathan Topham – EPA/OAQPS/SPPD  
John Voorhees – United States Stove Company  
Chet Wayland – EPA/OAQPS/AQAD





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
RESEARCH TRIANGLE PARK, NC 27711

MEMORANDUM

02/02/2022

OFFICE OF  
AIR QUALITY PLANNING  
AND STANDARDS

**SUBJECT:** Appropriate calculation of Medium Burn Rate Category in ASTM E-2779 Testing

**FROM:** Steffan Johnson  
Group Leader  
Measurement Technology Group  
Air Quality Assessment Division

STEFFAN  
JOHNSON

Digitally signed by  
STEFFAN JOHNSON  
Date: 2022.02.02  
08:28:07 -05'00'

**TO:** Robert Scinta, P.E.  
Chief, Air Branch  
Monitoring, Assistance, and Media Programs Division  
Office of Compliance, Office of Enforcement and Compliance Assurance

During a recent review of pellet heater compliance test reports, the Measurement Technology Group has uncovered an error in determining the appropriate Medium Burn Rate Category when using ASTM E-2779 for compliance pursuant to 40 CFR 60, subpart AAA. Specifically, the method requirements in section 9.4.1.2 and Table 1 of that test method incorrectly require that the Medium Burn Rate Category must fall below 50% of the maximum burn rate. This is not correct as this requirement assumes then that zero is the other bound for determining half of the maximum.

*9.4.1.2 Medium Burn Rate Category*—For burn rates in the medium segment, except as allowed in 9.4.1.4 or 9.4.1.5, the pellet heater shall be operated with the control or controls set in the position(s) as needed to achieve a burn rate that is  $\leq 50\%$  of the maximum burn rate.

TABLE 1

Burn Rate Segment	Maximum	Medium	Minimum
Description	Maximum achievable	$\leq 50\%$ of Maximum	Minimum achievable
Time at Burn Rate	60 +5 / - 0 minutes	120 +5 / - 0 minutes	180 +5 / - 0 minutes

The correct application of this requirement would be to determine the Medium Burn Rate Category at a level below 50% of the span between the Maximum Burn Rate and the Low Burn Rate (a non-zero value). Ergo, the correct calculation for finding that midpoint of 50% is defined as  $\frac{Max+M}{2}$ .

For example, if the Maximum Burn rate of an appliance is 1.79 kg/hr and the minimum is 1.23 kg/hr, the method would currently place the 50% requirement at 0.895 kg/hr. This is unachievable on this appliance and presents an impossible compliance requirement. Applying the equation laid out above the value of 1.51 is derived and, therefore, presents an appropriate and likely attainable emissions test requirement for the Medium Burn Rate Category.

During your reviews of such emissions tests, as reported to OECA and intended for compliance certification purposes, MTG recommends applying the above procedure in order to ascertain if a Medium Burn Rate was appropriately established during a compliance test.

CC:

Sarah Ayres - OECA

Angelina Brashear – OAQPS

Alice Edwards – Alaska DEC

Chuck French – OAQPS

Robert Lischinsky - OECA

Theresa Lowe - OAQPS

Rafael Sanchez – OECA

Robert Scinta - OECA

Mike Toney – OAQPS

Nathan Topham - OAQPS

Chet Wayland – OAQPS